

IN THE CLAIMS

Please amend the claims as follows:

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1. (Amended) Apparatus for reading or writing data markings [(25)] of an optical recording medium [(1)] having data markings [(25)] arranged along a track [(20)] and header markings [(25')] arranged laterally offset with respect to the centre of [this] the track [(20)], the apparatus comprising:

- a header identification unit [(8),] ;
- a header sequence detector [(9),] ;
- a track crossing detector [(10)] ; and
- an intermediate track detector [(11)] for generating an intermediate track signal [(MZC)], wherein the intermediate track detector is connected to outputs of the header identification unit [(8)], of the track crossing detector [(10)] and of the header sequence detector [(9)].

2. (Amended) Apparatus according to claim 1, [characterized in that] wherein the header identification unit [(8)] comprises a high-frequency path [(17, 18, 18', 19, 19', 28)], a low-frequency path [(29)] and a signal detector [(30, 31)], and has a track error signal [(PP-TE)] applied to it.

3. (Amended) Apparatus according to claim 1, [characterized in that] wherein the header sequence detector [(9)] comprises envelope detectors [(33, 33')], to which a track error signal [(PP-TE)] is fed, and [whose] has outputs [are] connected to a comparator [(34, 35, 36)].

4. (Amended) Apparatus according to claim 1, [characterized in that] wherein the header sequence detector [(9)] has a phase detector [(15, 15')], which is fed with signals [(A, B, C, D)] derived from detector elements [(6A, 6B, 6C, 6D)] of a multi-zone detector [(6)] of the apparatus.

5. (Amended) Apparatus according to claim 1, [characterized in that] wherein the track crossing detector [(10)] has a track error signal [(PP-TE)] applied to it, and comprises one of a phase shifter [(53)] and a peak value detector [(37, 37', 38)].

6. (Amended) Apparatus according to Claim 5, [characterized in that] wherein the track crossing detector [(10)] comprises at least two peak value detectors [(71, 72, 73, 74)], which are connected as extreme value detectors.

5 7. (Amended) Apparatus according to claim 1, [characterized in that] wherein the header identification unit [(8)] evaluates a summation signal [(HF)] of the detector signals [(A, B, C, D)].

10 8. (Amended) Apparatus according to Claim 1, [characterized in that it further comprises] further comprising a validity detector [(12)] for outputting a validity signal [(VALID)], and a track crossing frequency detector [(13)] for supplying a track cross signal to the validity detector.

15 9. (Amended) Apparatus according to claim 8, [characterized in that] wherein the header identification unit [(8)] comprises a high-frequency path [(17, 18, 18', 19, 19', 28)], a low-frequency path [(29)] and a signal detector [(30, 31)], and [has] a track error signal [(PP-TE)] is applied to [it] the header identification unit.

20 10. (Amended) Apparatus according to claim 8, [characterized in that] wherein the header sequence detector [(9)] comprises envelope detectors [(33, 33')], to which a track error signal [(PP-TE)] is fed, and [whose] has outputs [are] connected to a comparator [(34, 35, 36)].

25 11. (Amended) Apparatus according to claim 8, [characterized in that] wherein the header sequence detector [(9)] has a phase detector [(15, 15')], which is fed with signals [(A, B, C, D)] derived from detector elements [(6A, 6B, 6C, 6D)] of a multi-zone detector [(6)] of the apparatus.

30 12. (Amended) Apparatus according to claim 8, [characterized in that] wherein the track crossing detector [(10)] has a track error signal [(PP-TE)] applied [to it] thereto, and comprises one of a phase shifter [(53)] and a peak value detector [(37, 37', 38)].

13. (Amended) Apparatus according to Claim 12, [characterized in that] wherein the track crossing detector [(10)] comprises at least two peak value detectors [(71,72,73, 74)], which are connected as extreme value detectors.

5 14. (Amended) Apparatus according to claim 8, [characterized in that] wherein the header identification unit [(8)] evaluates a summation signal [(HF)] of the detector signals [(A, B, C, D)].

10 15. (Amended) Method for generating an intermediate track signal [(MZC)] in an apparatus for writing data markings [(25)] of an optical recording medium [(1)] having data markings [(25)] arranged along a track [(20)] and header markings [(25')] arranged laterally offset with respect to the centre of [this] the track, comprising the steps of

15 - checking [of] a signal [(PP-TE, PE)] derived from detector elements [(6A, 6B, 6C, 6D)] of the apparatus for the presence of signal components which are typical of header areas [(27, 27', 27'')],

- [given the presence of] if the typical signal components [of this type, determination of] are present, determining the order of signal components originating from differently arranged header markings [(25')]

20 - [generation of] generating a signal [(TC)] corresponding to [the] a track crossing frequency,

- [generation of] generating the intermediate track signal [(MZC)] from the order information and the signal [(TC)] corresponding to the track crossing frequency.

25 16. (Amended) Method according to Claim 9, [characterized in that] further comprising the step of detecting the track crossing frequency [(TZC) is detected], and, if a limit value is undershot, generating an invalidity signal [(VALID) is generated], which is cancelled only when signal components which are typical of header areas  
30 [(27, 27', 27'')] are present once again.